Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/US05/005812

International filing date: 25 February 2005 (25.02.2005)

Document type: Certified copy of priority document

Document details: Country/Office: US
Number: 60/547,706
Filing date: 25 February 2004 (25.02.2004)

Date of receipt at the International Bureau: 23 March 2005 (23.03.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)

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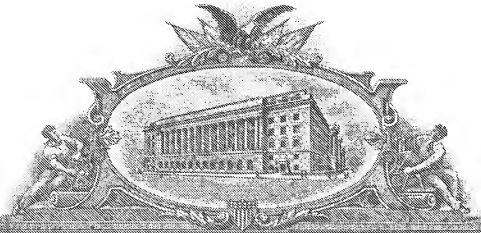

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APPLICATION NUMBER: ***60/547,706***
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This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. ER 873494326 US

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
HOWARD LEE	LOEWENTHAL	HINCKLEY, OHIO

Additional inventors are being named on the 1 *separately numbered sheets attached hereto*

TITLE OF THE INVENTION (500 characters max)

LEAK RESISTANT SIPHONING DEVICE FOR USE IN FLUID TRANSFER

Direct all correspondence to: CORRESPONDENCE ADDRESS

☐ Customer Number:

OR

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ENCLOSED APPLICATION PARTS *(check all that apply)*

☒ Specification *Number of Pages* 10
☒ Drawing(s) *Number of Sheets* 4
☐ Application Data Sheet. See 37 CFR 1.76
☐ CD(s), Number
☒ Other (specify) PHOTOS OF WORKING PROTOTYPE (6)

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(1) PHOTOS OF CONCEPT

☒ Applicant claims small entity status. See 37 CFR 1.27.
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Respectfully submitted,

SIGNATURE

Date 02-23-04

REGISTRATION NO. 52,243 *(if appropriate)*

Docket Number:

TYPED or PRINTED NAME ANDREW R. SPRIEGEL

TELEPHONE (440) 225-4234

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ANDREW RAYMOND	SPRIEGEL	AKRON, OHIO

Number 2 of 2

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Complete if Known

Application Number	
Filing Date	
First Named Inventor	HOWARD LEE LOEWENTHAL
Examiner Name	
Art Unit	
Attorney Docket No.	

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 80

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	80

SUBTOTAL (1) ($) 80

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below	Fee Paid
Total Claims		-20** =	X	=
Independent Claims		- 3** =	X	=
Multiple Dependent				=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

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FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

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SUBMITTED BY				(Complete *(if applicable)*)	
Name (Print/Type)	ANDREW R. SPIEGEL	*Registration No. (Attorney/Agent)*	52,243	*Telephone*	440.225.4234
Signature				*Date*	02-24-04

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LEAK RESISTANT SIPHONING DEVICE FOR USE IN FLUID TRANSFER

Inventors: Howard Loewenthal, Hinckley, Ohio; Andrew R. Spriegel, Avon, Ohio

Assignees: Howard Loewenthal, Hinckley, Ohio; Andrew R. Spriegel, Avon, Ohio

References Cited
U.S. PATENT DOCUMENTS

US 811,801	02/ 1906	Smith
US D234228	01/1975	Spiegel
US 4023305	05/1977	Harschel
US 4129066	12/1978	Corley
US 4299851	11/1981	Lowe
US 4349129	09/1982	Amneus
US 5154702	10/1992	Foyil
US 5408919	04/1995	Hutzler
US D390425	02/1998	Henry
US 5720330	02/1998	Schmalz, Jr.
US 5787799	08/1998	Mohrhauser
US 5934187	08/1999	Leon
US 1,977,062	10/1934	Higley
US 5,875,823 A	3/1999	Porter
US 6,634,393 B2	10/2003	Porter
US 6,575,204	06/2003	Godfrey

PUBLICATION NUMBER

ABSTRACT

An improved, leak resistant, siphoning device that includes an elongated hollow body member, an elastomeric resilient suction bulb and check valve assembly. The elongated hollow body member has a first open head end and a second open bulb end. The suction bulb defining a chamber therein, attached to the second open bulb end of the elongated hollow body member is squeezed and released so as to create suction to direct fluid up through the first open head end into the elongated hollow body member using pressure differential. Squeezing

the suction bulb can release the liquid and partial solids held within the elongated hollow body member out of the first open head end. Common use of such device as in cooking where liquid and partial solids that accumulate in a roasting pan are collected in the elongated hollow body member and are transferred into another pan or back on to the food that is being cooked to keep it moist during the cooking process. The exterior of the check valve has the approximate circumference as the interior of the body member and controls the flow of air into and out of the suction bulb. A device that has the means to create a vacuum by means of expelling air through a first one-way check valve. The check valve assembly has a second opposing check valve that allows flow back into the device. The check valve assembly has sealing properties with the elongated hollow body member. The residual pressure to open the second check valve is greater than the pressure to hold the column of liquid.

LEAK RESISTANT SIPHONING DEVICE FOR USE IN FLUID TRANSFER

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

The present invention relates to a siphoning and discharge device commonly called a food baster. More specifically the present invention relates to a leak resistant siphoning and discharge device for basting foods. Basters are most commonly used in cooking to transfer hot juices from the bottom of the cooking pan back on to the meat/food being cooked in the pan to keep the meat/food moist while cooking. Commercially there have been few substantial improvements made to these devices due to the low cost nature of the device. This improvement offers a low cost means to keep the baster from leaking or splattering hot liquid or partial solids by the means of a check valve assembly at the bulb end of the liquid tube.

2. BRIEF DESCRIPTION OF PRIOR ART

Prior art liquid basters are commonly used for transferring liquids and partial solids from the bottom of a cooking pan to another pan or on top of the food being cooked to keep it moist during the cooking process. The low cost basters do not adequately contain the liquid so as to effectively reduce leakage of liquid or partial solids that are drawn into the device for transfer to the desired location. More recent prior art that has been designed to reduce spillage are too costly to be commercially viable and are difficult to clean.

Basters come in a variety of sizes and shapes. Basters typically consist of a plastic, metal or glass elongated hollow body member and a resilient suction

bulb, which is removably attached to the elongated hollow body member. The basters use suction, created by squeezing the resilient bulb, to draw liquid and partial liquids into the elongated hollow body member. It relies on the vacuum being held by the resilient bulb or the user to hold a constant pressure on the resilient bulb. To discharge the liquid and partial solids from the open end of the tube, the bulb is squeezed to force air within the bulb out through the open end of the tube, expelling the liquid and partial solids.

Liquid or partial solids that are drawn up into the hollow member often leak out of the baster unintentionally. Also if the elongated hollow body member is tilted at a sufficient angle it allows the liquid contents to break the vacuum causing the liquid to leak out of the elongated hollow body member.

The disadvantage of leaking is that the liquid or partial solids are hot enough to burn users or people and pets that are nearby. The fats often contained in the liquid cause the fluid to burn to a greater extent than other hot liquids would. Also the leaking contents can spill on the floor, the counter, stove creating a mess or worse the oven's heating element creating a fire hazard.

In addition, over time the resilient bulb stiffens and becomes less resilient decreasing its ability to pull a vacuum and to hold liquids and partial solids in the elongated hollow body member. The materials that are used are such that they deteriorate over time. Frequently cracks develop in the bulb, which again affects the ability to create suction in the elongated hollow body member.

Another disadvantage is that the bulb and elongated hollow body member can have inadequate sealing, which again causes problems with the baster holding vacuum. The junction between the bulb and the elongated hollow body member also deteriorates over time as the resilient bulb ages. Many of the commercially available basters can be cleaned in dishwasher, which can accelerate deterioration by assembling and disassembling the bulb and the elongated hollow body member and outgassing of the pliable materials within the plastic member.

Prior art suggests that these deficiencies are well known to the device but have not been addressed commercially do to the complex methods devised to make the baster leak proof and the prohibitive associated costs.

U.S. Pat. No. 6,634,393 B2 to Jerry Porter has shown a primary valve located at the outlet of the tube. This presents sealing problems. The prior invention relies on a ball to close off the open end of the tube. The weight of the ball assembly and liquid is the only means for the ball to return to its sealing position. This coupled with the slippery nature of the liquid being drawn into the tube will prevent the ball from sealing. By adding a projection to activate or move the ball

to allow liquid to be drawn in also allows the user to "bump" or dislodge it causing an accidental discharge of liquid. The air vent located near the bulb will also act as a means for liquid to run out when the baster is rotated to a horizontal plane. Furthermore the valve that Porter suggests is dependant on gravity to return to its sealing position. By changing the angle and orientation of the baster tube will limit the effectiveness of the sealing.

In summary the prior art basters are deficient in at least the following ways:

1. The basters leak liquid and partial solids in an undesired fashion.

2. The basters tend to leak fluid to expansion of gases in the baster which tends to push liquid or partial solids out of the tube.

3. The basters typically can not be tilted at an angle so as to be effective in easily and efficiently basting foods.

4. The basters typically pose undue safety hazards due to leaking fluids.

5. The basters which attempt to solve the four problems discussed above are not commercially cost effective.

6. The basters mentioned in item 5 above that have a primary valve located at the open tapered end of the tube do not seal adequately.

7. The basters mentioned in item 5 above are difficult to clean.

8. The basters mentioned in item 5 above are complex in design.

9. The basters mentioned in item 5 above are complex in operation.

SUMMARY OF THE INVENTION

The present invention relates to an improved siphoning device for liquids and partial solids, particularly of the type used for basting foods.

The present invention has all the advantages of a prior art baster with several additional advantages. This invention draws on the principals of a vacuum and is analogous to capping the end of a soda straw with your finger to capture a column of liquid. This principal is well established to its effectiveness. By drawing on this concept the addition of a check valve assembly at the top of the baster tube creates a leak proof device that is simpler to operate, more dependable and as easy to clean at the prior art that is commercially available.

The present invention has three members, an elongated hollow body member, a squeeze bulb to draw fluid up into the elongated hollow body member and a check valve assembly. The addition of a check valve assembly at the top of the hollow tube, at the bulb end, allows the baster to be held in various orientations with less fluid spillage than a prior art baster. The check valve assembly has two opposing valves which allow air to be expelled outward and also for air to be drawn inward.

The check valve assembly located at the top of the tube improves the seal and reduces the volume of air over the column of liquid, increasing the effectiveness of the baster to hold the liquid without leaking. By making the check valve assembly out of a single elastomeric element, it offers an economical solution to the current prior art.

Less spillage keeps the kitchen area cleaner and safer. The leak resistant baster reduces the opportunity for liquid to be accidentally spilled on the heating elements of the oven reducing the chance of smoke and fire and the need for cleaning.

The device potentially reduces the amount of time to baste because it is possible that the grill, holding the food pan, does not have to be extended out in order to baste the food. The baster can be operated at greater angles. The food requires less movement in order to be basted. The oven door can be open for less time therefore saving energy costs and reduces cooking time.

The baster components can be cleaned in a dishwasher. Even as the bulb wears, and the seal between the bulb and the elongated hollow body member becomes less effective the check valve assembly maintains the sealing properties and allows the baster to hold suction more effectively thereby increasing the safety and useful life of the baster.

BRIEF DESCRIPTION OF THE FIGURES

The present invention will now be described by the way of a non-limiting example, with reference to the attached drawings in which:

FIG. 1 is side view partially in cross section of a **baster**,

FIG. 2 is an enlarged cross section view of the check valve assembly with two elastomeric valves of the **baster** in FIG. 1;

FIG. 3 is an enlarged cross section of an alternate embodiment of the check valve assembly utilizing two elastomeric reed valves;

FIG. 4 is a side elevation view of an alternate embodiment of the hollow tube member;

FIG. 5 is an side elevation view of an alternate embodiment of the hollow tube member;

FIG. 6 is a cross sectional view of an alternate embodiment of the check valve assembly using two ball valves;

FIG. 7 is a cross sectional view of an alternate embodiment of the check valve assembly using a single disk check valve;

FIG. 8 is a cross sectional view of an alternate embodiment of the check valve assembly using a two directional single elastomeric valve;

FIG. 9 is a cross sectional view of the check valve assembly shown in FIG. 8 actuated to release the liquid from the baster;

FIG. 10 is a cross sectional view of the check valve assembly shown in FIG. 8 actuated to draw fluid into the baster.

DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

One configuration of the present invention is illustrated in FIG 1. In the invention the two basic parts that are common to prior art are, a resilient bulb 10 and a hollow elongated tube 14. Stretching the open end of the bulb 10 over the end of the tube 14 easily assembles these parts. Circumferential projections 16 are added to the elongated tube 14 to increase the sealing properties between the bulb 10 and the tube 14.

The addition of the check valve assembly 12 has several beneficial advantages. It reduces the dependency of the device on the leak proof fit between the bulb 10 and the tube 14. It also adds the ability to control the vacuum, which allows the liquid column in the tube 14 to be held. Any changes in pressure will increase or decrease the vacuum holding the liquid. Any increase in pressure will allow the baster 30 to expel hot liquid. By employing the check valve assembly 12 it is possible to control the vacuum with no additional effort.

The check valve assembly 12 consists of an elastomeric material that is molded as a one piece assembly It is possible to construct this assembly 12 with two opposing check valves 17 and 18. This allows the size of the check valves 17 and 18 to be optimized for the amount of pressure required to make them open.

The operation of the baster 30 is as follows: Pressure is applied to bulb 10. Air is expelled through the first valve 17 of check valve assembly 12 out through hollow tube 14 and exiting through open end of tube 19. While maintaining pressure on the bulb 10 the open end of the tube 19 is placed into liquid. User gradually releases pressure on bulb 10. As pressure is being released, a vacuum is created at the check valve assembly 12 opening valve 18 creating suction at the open end 19 of the hollow tube 14 where the liquid is drawn into the tube 14. After the desired amount of liquid is extracted or the tube 14 is filled, the baster open end 19 is removed from the liquid.

While the liquid is contained in the baster 30 it is now possible to remove any residual pressure from the bulb 10 and have the liquid remain in tube 14 without leakage. The additional air that is drawn into the bulb 10 is drawn past the liquid and through the check valve 18. The check valves operate automatically from a closed to open back to close orientation in a manner that the vacuum holding the column of liquid is maintained.

For the liquid to be emptied from the tube 14 pressure is applied to the bulb 10. As the pressure increases at the check valve assembly 12, the air will open check valve 17 expelling the liquid out the open end of the tube 19.

FIG. 2 shows an enlarged cross section of an elastomeric check valve assembly 12 with the first valve 18 and second valve 17. The first valve 18 has a first opening 15 for air flow. The second valve 17 has a second opening 19 for air flow. The first valve 18 and second valve 17 have chamfered edges 13 to bias their opening under pressure differentials. The material used can be silicone or urethane but is not limited to these materials.

As seen in FIG. 3 the check valve assembly 50 can be made using reed valves 32 and 34. The reed valves are attached to the valve assembly 38 using a common type fastener 36 such as a rivet. The materials used can be composite or metal but are not limited to these materials.

The elongated hollow tube can be made in various configurations such as those shown in FIG. 4 and FIG.5, tubes 60 and 70 respectively. The materials used can be metal or composite but is not limited to these materials

Again the check valve assembly 80 shown in FIG. 6 can be made using a first spring 43 first ball valve 42 and an opposing second spring 41 second ball valve 44. First ball valve 42 and second ball valve 44 actuate when the pressure pushes the ball against the spring, 43 and 41, respectively allowing flow through opening 48 or 46 respectively.

In the simplest form it is possible with this design to utilize one check valve 100 that has bi-directional properties FIG. 8. In this version, with a single check valve 100, it is possible for the check valve to perform its function in both directions. Due to the nature and geometry of the elastomeric material it is possible to have the sealing properties on the cut faces 86 and 88 of a slit 92 that is perpendicular to the plane of material of the valve 94. By having this geometry symmetrical to the plane of the valve 94 it allows the

valve 100 to open in either direction when pressure or vacuum is applied to a surface of the valve 100. It is also possible to alter the geometry to improve performance in one direction of operation. It is also able to construct a more complex geometry where the planes of the valve are no longer perpendicular or the surfaces are no longer flat.

FIG. 9 and FIG. 10 show the elastomeric valve 100 shown in FIG. 8 opening in both directions, 110 and 120 respectively.

CLAIMS

1. A leak resistant siphoning device for use in fluid transfer, comprising:

an elastomeric resilient suction bulb defining an chamber therein,

an elongated hollow tube having a tapered head end opening and a bulb end opening that form a duct that is removably attached at the said bulb end of said tube with said resilient suction bulb for providing communication between the duct and the chamber, and

a check valve assembly.

2. A device as in claim 1 where the said check valve assembly is removably attached to the said bulb end of said hollow tube for providing communication between the said duct and the said chamber.

3. A device assembly as in claim 1 where the said check valve assembly contains two independent elastomeric valves that operate in opposing directions.

4. A device as in claim 1 where the said check valve assembly contains a single bidirectional elastomeric valve that operates in both directions.

5. A hollow tube as in claim 1 where the geometry of the said tube allows better access to the bottom of the cooking pan.

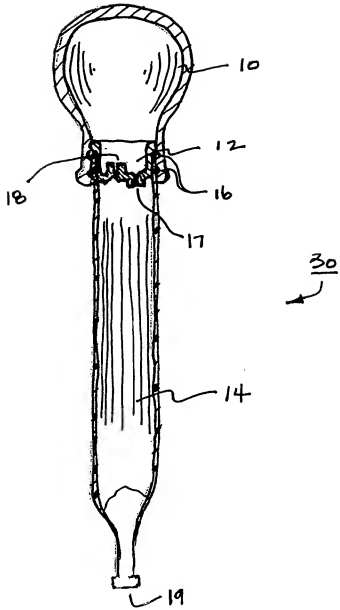

FIG. 1

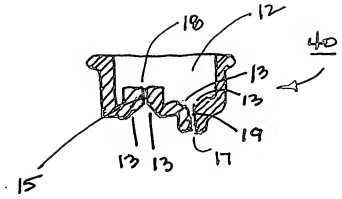

FIG. 2.

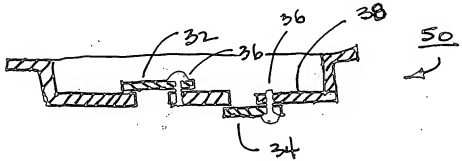

FIG. 3

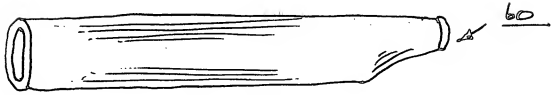

FIG. 4

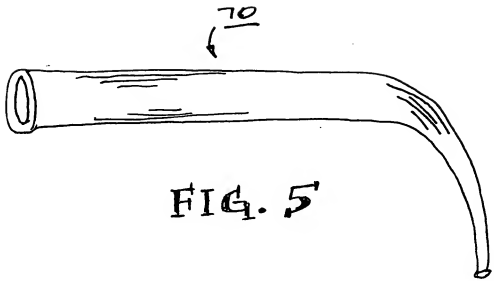

FIG. 5

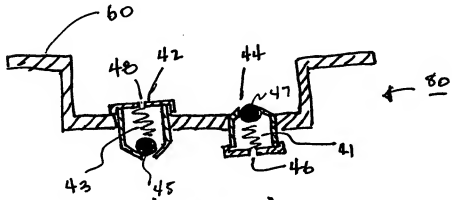

FIG. 6

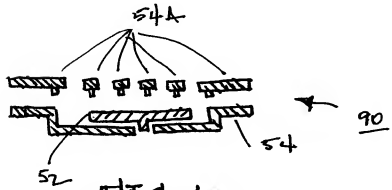

FIG 7

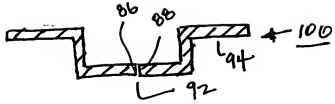

FIG. 8

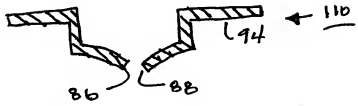

FIG. 9

FIG. 10